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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,910	09/04/2003	Jeffery A. Whiteford	01-002710	9092
33140	7590	01/12/2005	EXAMINER	
NANOSYS INC. - 2625 HANOVER ST. PALO ALTO, CA 94304			VIJAYAKUMAR, KALLAMBELLA M	
			ART UNIT	PAPER NUMBER
			1751	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/656,910

Applicant(s)

WHITEFORD ET AL.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/18/2004
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) 59-106 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-58 is/are allowed.
- 6) ☒ Claim(s) 1-31, 33-36 is/are rejected.
- 7) ☒ Claim(s) 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/6/04;2/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Applicant's election without traverse of Group I, Species-I (Claims 1-58) in the reply received on 10/22/2004 is acknowledged. Claims 59-106 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups, there being no allowable generic or linking claim.

The information disclosure statement (IDS) submitted on 02/17/2004 and 07/06/2004 is in compliance with the provisions of 37 CFR 1.97, and accordingly, the information disclosure statements are being considered by the examiner.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The use of phrase “for modification of charge transport across a nanostructure-containing matrix,” in the claim-1 and 37-58) have not been treated with patentability. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

The examiner construes this language as “Intended Use” and not treated with merits for patentability.

1. Claims 1-3, 5-9 and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Shelnut et al (US 2002/0110645).

Shelnut et al disclose conductive polymer colloidal compositions of conjugated polymers or hybrid conductive polymers containing colloidal metal and oxide/sulfide particles doped by sulfonic acid dopant/s and further stabilized by the either anionic or cationic surfactants. Shelnut et al further disclose charge transfer property of the polymer, that would meet the limitation of the instant claims (Col-2, Sec. 0016; Col-4, Sec. 0034). The suitable polymers include, but are not limited to, polypyrrole, polyaniline, polythiophene, polyfuran and derivatives thereof, that would meet the limitations of the body in the instant claims 1, 7-9, 24-25 (Col-4, Sec. 0035, 0038). The derivatives would meet the limitation of the tail in the tail in the claim-1. The surfactants would meet the limitation of the head in the instant claims 1 and 5-6. colloidal metal

and oxide/sulfide particles would meet the limitation of instant claims 2-3 ((Pg-4, Sections 0034-0035, 0040-0044, Pg-5, Sec. 0045-0046, 0053).

All the limitations of the instant claims are met.

The reference is anticipatory.

2. Claims 1-4, 6, 7-16, 18-20, 24-26, 33, 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenham et al (Physical Review B, 1996, 54(24), 713-714).

Greenham et al disclose a conjugated polymer/semiconductor-nanocrystal composition consisting of CdSe/Trioctylphosphineoxide (TOPO)/MEH-PPV, wherein CdSe would meet the limitation of a nanostructure/nanocrystal in the instant claims 1-3). TOPO would meet the limitation of the head group in the instant claims 1, 4, 6 and 35. MEH_PPV would meet the limitation of the body and side-chain in the instant claims 1, 7-16, 18-20, 24-26, 33 and 35-36.

All the limitations of the instant claims are met.

The reference is anticipatory.

3. Claims 1-31, 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Adams et al (US 6,649,129).

Adams et al disclose a dispersion of nanoparticles of conjugated polymers comprising inorganic semiconductors would meet the limitation of claims 2-3 and organic semiconductors such as PANI, PPV and their derivatives such as MEH-PPV, BCHA-PPV would meet the limitation of the body and side-chain, and dispersants such as TOPO, TOP, TBP and co-dispersants such as acrylic acid would meet the limitations of the head and the linking groups

with the body forming a tail in the instant claims. Adams et al further disclose the dispersants to be amphiphatic dispersants with hydrophobic and hydrophilic groups with alkyl/alkylene/alkynyl branched groups with 2-24 carbon atoms and with an hetero-atom of N, O, S, P, or Si that would meet the limitation of various tail groups in the instant claims (Col-5, Lines 29-39; Col-7, Line-39- Col-8, Line-66; Col-11, Line-5-55; Col-12, lines 26-31; Col-13, Lines 20-28; Col-14, Lines 44-49; Col-19, Lines 60-65).

All the limitations of the instant claims are met.

The reference is anticipatory.

Allowable Subject Matter

Claims 37-58 are allowed.

Claim 32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record neither teaches nor suggestive of the conductive nano-compositions with the structures and the conductive nano-composition with a tail group containing a thiophene moiety positioned between the body and the alkyne moiety meeting the limitations of the instant claims by the applicants.

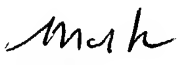
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on M-Th, 07.00 - 16.30 hrs, Alt. Fri: 07.00-15.30 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kmv
January 07, 2005


Mark Kopeck
Primary Examiner